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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,251	02/27/2004	Ian McGregor Slothers	M0025.0396/P396	1337

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EXAMINER	
LE, JOHN H	

ART UNIT	PAPER NUMBER
2863	

MAIL DATE	DELIVERY MODE
12/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of Allowability	Application No.	Applicant(s)	
	10/787,251	SLOTHERS ET AL.	
	Examiner	Art Unit	
	JOHN H. LE	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *11/07/2008*.

2. ☒ The allowed claim(s) is/are *1-60,66 and 68-81*.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/John H Le/
Primary Examiner, Art Unit 2863

Response to Amendment

1. Applicant's amendment filed 11/07/2008 has been entered and carefully considered.

Claims 1, 8, 9, 19, 26, 59, 60, 70, 73, and 75 have been amended.

Claims 61-65 and 67 have been cancelled.

Reasons for Allowance

2. Claims 1-60, 66, and 68-81 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art fails to teach the invention as claimed in independent claims 1, 19, 59, 60, 73, and 75, requiring in an apparatus and method for generating an output dependent upon the impedance or at least one component of the impedance of a device, wherein a switch arrangement connected to said measurement channel for switching the measurement channel to sequentially measure a first voltage on a first side of said load component, and a voltage difference between said first side and a second side of said load component; and a processing arrangement connected to said measurement channel for processing the sequentially measured voltages to generate an output dependent upon said impedance or said at least one component of impedance of said device. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

The prior art fails to teach the invention as claimed in independent claim 8, requiring in an apparatus for generating an output dependent upon the impedance or at least one component of the impedance of a device, wherein a switch arrangement connected to said measurement channel for switching the measurement channel to sequentially measure a first voltage on a first side of said load component, and one of a second voltage on a second side of said load component or a voltage difference between said first side and a second side of said load component, and a voltage difference between said first side and a second side of said load component; and a processing arrangement connected to said measurement channel for processing the sequentially measured voltages to generate an output dependent upon said impedance or said at least one component of impedance of said device, wherein said processing arrangement is adapted to generate said output as an indication of whether or not a factor related to the impedance or at least one component thereof is above or below a threshold without determining an absolute measure of impedance. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

The prior art fails to teach the invention as claimed in independent claim 26, requiring in a method for generating an output dependent upon the impedance or at least one component of the impedance of a device, wherein using a measurement channel to sequentially measure a first voltage on a first side of said load component, and one of a second voltage on a second side of said load component or a voltage

difference between said first side and a second side of said load component; and processing the sequentially measured voltages to generate an output dependent upon said impedance or at least one component of the impedance of said device; wherein the processing generates said output as an indication of whether or not a factor related to the impedance or at least one component of the impedance is above or below a threshold.. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

The prior art fails to teach the invention as claimed in independent claims 38, 48, requiring in an apparatus and method for generating an output dependent upon the impedance or at least one component of the impedance of a device, wherein said processing arrangement is adapted to: determine a first parameter indicative of the complex amplitude of the first voltage on a first side of said load component connected to said device, and a second parameter indicative of the complex amplitude of said difference voltage or a calculated difference voltage comprising the difference between the first and second voltages; multiply each of the first and second determined parameters by the complex conjugate of the second determined parameter to generate third and fourth parameters respectively; and compare said third and fourth parameters to generate an output or compare one or more components or derivatives of the third parameter and said fourth parameter to generate said output. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been

found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

The prior art fails to teach the invention as claimed in independent claim 69, requiring in a method of identifying a device having an impedance characteristic as a function of frequency, wherein said processing comprises: obtaining third and fourth parameters indicative of the complex amplitude, at said fist and second frequency respectively, of said of said difference voltage or a calculated difference voltage comprising the difference between the first and second voltages; multiplying each of the first and third determined parameters by the complex conjugate of the third determined parameter to generate fifth and sixth parameters respectively; multiplying each of the second and fourth determined parameters by the complex conjugate of the fourth determined parameter to generate seventh and eighth parameters respectively; and comparing at least one of parameters for said device with corresponding at least one parameters for at least one other device to identify said device. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

The prior art fails to teach the invention as claimed in independent claim 70, requiring in a proximity sensor for sensing the proximity of a target, wherein an analog difference amplifier connected to said first end and a second end of said impedence component; a switch connected to switch between said first end of said impedance component and output of said analog difference amplifier; a signal generator connected

to said second end of said impedance component for generating an electrical signal for application to the impedance component and electrical component; a processor connected to the analog -to-digital converter for receiving a digital voltage signal and for generating a proximity signal, wherein said processor is adapted to control said switch to switch to connect to said first and second ends of said impedance component sequentially. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

The prior art fails to teach the invention as claimed in independent claim 77, requiring in a method of identifying a device having an impedance characteristic as a function of frequency, wherein processing said measurements in a multiplicative and non divisional manner to determine if a first impedance or part of the impedance of the device at a first frequency has a predefined inequality relationship with a second impedance or part of the impedance of the device at a second frequency, without calculating either impedance; identifying the device in dependence upon the predefined inequality relationship. It is these limitations as they are claimed in the combination with other limitations of claim, which have not been found, taught or suggested in the prior art of record, that make these claims allowable over the prior art.

Back Ground Invention (BGI) disclose an apparatus for generating an output dependant upon the impedance or at least one component of the impedance of a device (1)(Fig.1), the apparatus comprising: a load component (2) having a known impedance or at least one component thereof for connection in series with said device (1)(BGI ,

Fig.1); a signal generating (6) arrangement for generating a time-varying electrical signal for application to the series connected load component (2) and device (1)(e.g. BGI, Fig.1, page 2, lines 6-10); a measurement channel for measuring voltages (BGI, Fig.1, page 2, lines 10-16); a measurement channel (ACD1, LPF1, ACD2, LPF2) to measure a first voltage (Vo) on a first side of said load component, and one of a second voltage (Vs) on a second side of said load component or a voltage difference across said load component (2)(BGI, Fig.1, page 2, lines 10-16); and a processing (processor 3) arrangement connected to said measurement channel for processing the measured voltages to generate an output dependant upon said impedance or said at least one component of impedance of said device (1)(BGI, Fig.1, page 2, lines 10-16, page 4).

Freeman et al. (USP 6,816,797) disclose a switch (22) arrangement connected to said measurement channel for switching the measurement channel to sequentially measure voltages (e.g. Fig.3, Col.3, line 63- Col.4, line 4, Col.6, lines 39-50).

However, the Back Ground Invention (BGI) and Freeman et al. do not disclose the combination of the apparatus and method as discussed above.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Contact Information

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN H. LE whose telephone number is (571) 272-2275. The examiner can normally be reached on 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A. Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John H Le/
Primary Examiner, Art Unit 2863
December 13, 2008